

comprising:

- a) exposing a sample comprising the target polynucleotide to a compound, and
- b) detecting altered expression of the target polynucleotide.

5 28. An isolated polynucleotide comprising a polynucleotide sequence of SEQ ID NO:83.

29. A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 28.

10 30. A cell transformed with a recombinant polynucleotide of claim 29.

31. A transgenic organism comprising a recombinant polynucleotide of claim 29.

15 32. A method for producing a polypeptide comprising an amino acid sequence of SEQ ID NO:40, the method comprising:

- a) culturing the cell of claim 30 under conditions suitable for expression of the polypeptide, and
- b) recovering the polypeptide so expressed.

20 33. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a sequence of claim 28, the method comprising:

- a) exposing a sample comprising the target polynucleotide to a compound, and
- b) detecting altered expression of the target polynucleotide.

25 34. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

a) an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37,

30 b) a naturally occurring amino acid sequence having at least 90% sequence identity to an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37,

c) a biologically active fragment of an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37, and

35 -d) an immunogenic fragment of an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37.

35. An isolated polypeptide of claim 34 selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37.

5 36. An isolated polynucleotide encoding a polypeptide of claim 34.

37. An isolated polynucleotide encoding a polypeptide of claim 35.

10 38. An isolated polynucleotide of claim 37 selected from the group consisting of SEQ ID NO:48, SEQ ID NO:54, and SEQ ID NO:80.

39. A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 36.

15 40. A cell transformed with a recombinant polynucleotide of claim 39.

41. A transgenic organism comprising a recombinant polynucleotide of claim 39.

42. A method for producing a polypeptide of claim 34, the method comprising:

20 a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 34, and

25 b) recovering the polypeptide so expressed.

43. An isolated antibody which specifically binds to a polypeptide of claim 34.

44. An isolated polynucleotide comprising a polynucleotide sequence selected from the group consisting of:

30 a) a polynucleotide sequence selected from the group consisting of SEQ ID NO:48, SEQ ID NO:54, and SEQ ID NO:80.

 b) a naturally occurring polynucleotide sequence having at least 70% sequence identity to a polynucleotide sequence selected from the group consisting of SEQ ID NO:48, SEQ ID NO:54, and SEQ ID NO:80.

35 c) a polynucleotide sequence complementary to a).

 d) a polynucleotide sequence complementary to b), and

 e) an RNA equivalent of a)-d).

45. An isolated polynucleotide comprising at least 60 contiguous nucleotides of a polynucleotide of claim 44.

5 46. A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 44, the method comprising:

 a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions whereby a hybridization
10 complex is formed between said probe and said target polynucleotide or fragments thereof, and

 b) detecting the presence or absence of said hybridization complex, and, optionally, if present, the amount thereof.

 47. A method of claim 46, wherein the probe comprises at least 60 contiguous nucleotides.

15 48. A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 44, the method comprising:

 a) amplifying said target polynucleotide or fragment thereof using polymerase chain reaction amplification, and

20 b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

 49. A pharmaceutical composition comprising an effective amount of a polypeptide of claim 34 and a pharmaceutically acceptable excipient.

25 50. A pharmaceutical composition of claim 49, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37.

30 51. A method for treating a disease or condition associated with decreased expression of functional human transport proteins (TPPT), comprising administering to a patient in need of such treatment the pharmaceutical composition of claim 49.

 52. A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 34, the method comprising:

35 a) exposing a sample comprising a polypeptide of claim 34 to a compound, and
 b) detecting agonist activity in the sample.

53. A pharmaceutical composition comprising an agonist compound identified by a method of claim 52 and a pharmaceutically acceptable excipient.

5 54. A method for treating a disease or condition associated with decreased expression of functional human transport proteins (TPPT), comprising administering to a patient in need of such treatment a pharmaceutical composition of claim 53.

55. A method for screening a compound for effectiveness as an antagonist of a polypeptide
10 of claim 34, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 34 to a compound, and
- b) detecting antagonist activity in the sample.

56. A pharmaceutical composition comprising an antagonist compound identified by a
15 method of claim 55 and a pharmaceutically acceptable excipient.

57. A method for treating a disease or condition associated with overexpression of functional human transport proteins (TPPT), comprising administering to a patient in need of such treatment a pharmaceutical composition of claim 56.

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58. A method of screening for a compound that specifically binds to the polypeptide of claim 34, said method comprising the steps of:

- a) combining the polypeptide of claim 34 with at least one test compound under suitable conditions, and
- 25 b) detecting binding of the polypeptide of claim 34 to the test compound, thereby identifying a compound that specifically binds to the polypeptide of claim 34.

59. A method of screening for a compound that modulates the activity of the polypeptide of claim 34, said method comprising:

- 30 a) combining the polypeptide of claim 34 with at least one test compound under conditions permissive for the activity of the polypeptide of claim 34.
- b) assessing the activity of the polypeptide of claim 34 in the presence of the test compound, and
- c) comparing the activity of the polypeptide of claim 34 in the presence of the test compound
35 with the activity of the polypeptide of claim 34 in the absence of the test compound, wherein a change in the activity of the polypeptide of claim 34 in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide of claim 34.

60. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a sequence of claim 38, the method comprising:

- a) exposing a sample comprising the target polynucleotide to a compound, and
- b) detecting altered expression of the target polynucleotide.

61. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:1.

62. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:2.

63. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:3.

64. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:4.

65. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:6.

66. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:7.

67. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:8.

68. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:9.

69. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:10.

70. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:12.

71. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:13.

72. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:14.

73. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:15.

74. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:16.

75. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:17.

76. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:18.

77. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:19.

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78. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:20.

79. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:21.

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80. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:22.

81. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:23.

82. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:24.

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83. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:25.

84. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:26.

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85. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:27.

86. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:28.

87. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:29.

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88. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:30.

89. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:31.

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90. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:33.

91. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:34.

92. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:35.

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93. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:36.

94. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:38.

95. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:39.

96. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:41.

97. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:43.

98. A method of claim 42, wherein the polypeptide has the sequence of SEQ ID NO:5.

99. A method of claim 42, wherein the polypeptide has the sequence of SEQ ID NO:11.

100. A method of claim 42, wherein the polypeptide has the sequence of SEQ ID NO:37.

101. A diagnostic test for a condition or disease associated with the expression of human transport proteins (TPPT) in a biological sample comprising the steps of:

a) combining the biological sample with an antibody of claim 10, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex; and

b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.

102. A diagnostic test for a condition or disease associated with the expression of human transport proteins (TPPT) in a biological sample comprising the steps of:

a) combining the biological sample with an antibody of claim 43, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex; and

b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.

103. The antibody of claim 10, wherein the antibody is:

a) a chimeric antibody,

b) a single chain antibody,

c) a Fab fragment,

d) a F(ab')₂ fragment, or

e) a humanized antibody.

104. The antibody of claim 43, wherein the antibody is:

- a) a chimeric antibody.
- b) a single chain antibody.
- 5 c) a Fab fragment.
- d) a $F(ab')_2$ fragment, or
- e) a humanized antibody.

105. A composition comprising an antibody of claim 10 and an acceptable excipient.

106. A composition comprising an antibody of claim 43 and an acceptable excipient.

107. A method of diagnosing a condition or disease associated with the expression of human transport proteins (TPPT) in a subject, comprising administering to said subject an effective amount of the composition of claim 105.

108. A method of diagnosing a condition or disease associated with the expression of human transport proteins (TPPT) in a subject, comprising administering to said subject an effective amount of the composition of claim 106.

109. A composition of claim 105, wherein the antibody is labeled.

110. A composition of claim 106, wherein the antibody is labeled.

111. A method of diagnosing a condition or disease associated with the expression of human transport proteins (TPPT) in a subject, comprising administering to said subject an effective amount of the composition of claim 109.

112. A method of diagnosing a condition or disease associated with the expression of human transport proteins (TPPT) in a subject, comprising administering to said subject an effective amount of the composition of claim 110.

113. A method of preparing a polyclonal antibody with the specificity of the antibody of claim 10 comprising:

- a) immunizing an animal with a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6,

SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43, or an immunogenic fragment thereof, under conditions to elicit an antibody response:

b) isolating antibodies from said animal; and

c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43.

114. A method of preparing a polyclonal antibody with the specificity of the antibody of claim 43 comprising:

a) immunizing an animal with a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37, or an immunogenic fragment thereof, under conditions to elicit an antibody response;

b) isolating antibodies from said animal; and

c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37.

115. An antibody produced by a method of claim 113.

116. An antibody produced by a method of claim 114.

117. A composition comprising the antibody of claim 115 and a suitable carrier.

118. A composition comprising the antibody of claim 116 and a suitable carrier.

119. A method of making a monoclonal antibody with the specificity of the antibody of claim 10 comprising:

- a) immunizing an animal with a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43, or an immunogenic fragment thereof, under conditions to elicit an antibody response;
- b) isolating antibody producing cells from the animal;
- c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells;
- d) culturing the hybridoma cells; and
- e) isolating from the culture monoclonal antibody which binds specifically to a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43.

120. A method of making a monoclonal antibody with the specificity of the antibody of claim 43 comprising:

- a) immunizing an animal with a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37, or an immunogenic fragment thereof, under conditions to elicit an antibody response;
- b) isolating antibody producing cells from the animal;
- c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells;
- d) culturing the hybridoma cells; and
- e) isolating from the culture monoclonal antibody which binds specifically to a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37.

121. A monoclonal antibody produced by a method of claim 119.

122. A monoclonal antibody produced by a method of claim 120.

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123. A composition comprising the antibody of claim 121 and a suitable carrier.

124. A composition comprising the antibody of claim 122 and a suitable carrier.

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125. The antibody of claim 10, wherein the antibody is produced by screening a Fab expression library.

126. The antibody of claim 43, wherein the antibody is produced by screening a Fab expression library.

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127. The antibody of claim 10, wherein the antibody is produced by screening a recombinant immunoglobulin library.

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128. The antibody of claim 43, wherein the antibody is produced by screening a recombinant immunoglobulin library.

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129. A method for detecting a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43 in a sample, comprising the steps of:

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a) incubating the antibody of claim 10 with a sample under conditions to allow specific binding of the antibody and the polypeptide; and

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b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22,

SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43 in the sample.

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130. A method for detecting a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37 in a sample, comprising the steps of:

a) incubating the antibody of claim 43 with a sample under conditions to allow specific
10 binding of the antibody and the polypeptide; and

b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37 in the sample.

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131. A method of purifying a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43 from a sample, the method comprising:

a) incubating the antibody of claim 10 with a sample under conditions to allow specific
25 binding of the antibody and the polypeptide; and

b) separating the antibody from the sample and obtaining the purified polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:41, and SEQ ID NO:43.

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132. A method of purifying a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37 from a sample, the method comprising:

a) incubating the antibody of claim 43 with a sample under conditions to allow specific binding of the antibody and the polypeptide; and

b) separating the antibody from the sample and obtaining the purified polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:11, and SEQ ID NO:37.

133. A microarray wherein at least one element of the microarray is a polynucleotide of claim 12.

134. A microarray wherein at least one element of the microarray is a polynucleotide of claim 45.

135. A method for generating a transcript image of a sample which contains polynucleotides, the method comprising the steps of:

a) labeling the polynucleotides of the sample.

b) contacting the elements of the microarray of claim 133 with the labeled polynucleotides of the sample under conditions suitable for the formation of a hybridization complex, and

c) quantifying the expression of the polynucleotides in the sample.

136. A method for generating a transcript image of a sample which contains polynucleotides, the method comprising the steps of:

a) labeling the polynucleotides of the sample.

b) contacting the elements of the microarray of claim 134 with the labeled polynucleotides of the sample under conditions suitable for the formation of a hybridization complex, and

c) quantifying the expression of the polynucleotides in the sample.

137. An array comprising different nucleotide molecules affixed in distinct physical locations on a solid substrate, wherein at least one of said nucleotide molecules comprises a first oligonucleotide or polynucleotide sequence specifically hybridizable with at least 30 contiguous nucleotides of a target polynucleotide, said target polynucleotide having a sequence of claim 11.

138. An array comprising different nucleotide molecules affixed in distinct physical locations on a solid substrate, wherein at least one of said nucleotide molecules comprises a first oligonucleotide or polynucleotide sequence specifically hybridizable with at least 30 contiguous nucleotides of a target polynucleotide, said target polynucleotide having a sequence of claim 44.

139. An array of claim 137, wherein said first oligonucleotide or polynucleotide sequence is completely complementary to at least 30 contiguous nucleotides of said target polynucleotide.

5 140. An array of claim 138, wherein said first oligonucleotide or polynucleotide sequence is completely complementary to at least 30 contiguous nucleotides of said target polynucleotide.

10 141. An array of claim 139, wherein said first oligonucleotide or polynucleotide sequence is completely complementary to at least 60 contiguous nucleotides of said target polynucleotide.

142. An array of claim 140, wherein said first oligonucleotide or polynucleotide sequence is completely complementary to at least 60 contiguous nucleotides of said target polynucleotide.

15 143. An array of claim 137, which is a microarray.

144. An array of claim 138, which is a microarray.

20 145. An array of claim 139, further comprising said target polynucleotide hybridized to said first oligonucleotide or polynucleotide.

146. An array of claim 140, further comprising said target polynucleotide hybridized to said first oligonucleotide or polynucleotide.

25 147. An array of claim 137, wherein a linker joins at least one of said nucleotide molecules to said solid substrate.

148. An array of claim 138, wherein a linker joins at least one of said nucleotide molecules to said solid substrate.

30 149. An array of claim 137, wherein each distinct physical location on the substrate contains multiple nucleotide molecules having the same sequence, and each distinct physical location on the substrate contains nucleotide molecules having a sequence which differs from the sequence of nucleotide molecules at another physical location on the substrate.

35 150. An array of claim 138, wherein each distinct physical location on the substrate contains multiple nucleotide molecules having the same sequence, and each distinct physical location on the

substrate contains nucleotide molecules having a sequence which differs from the sequence of nucleotide molecules at another physical location on the substrate.

5 151. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:1.

152. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:2.

10 153. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:3.

154. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:4.

155. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:6.

15 156. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:7.

157. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:8.

20 158. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:9.

159. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:10.

160. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:12.

25 161. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:13.

162. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:14.

30 163. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:15.

164. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:16.

165. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:17.

35 166. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:18.

167. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:19.

168. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:20.

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169. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:21.

170. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:22.

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171. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:23.

172. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:24.

173. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:25.

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174. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:26.

175. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:27.

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176. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:28.

177. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:29.

178. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:30.

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~~179.~~ A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:31.

180. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:33.

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181. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:34.

182. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:35.

183. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:36.

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184. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:38.

185. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:39.

186. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:41.

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187. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:43.

188. A polypeptide of claim 34, comprising the amino acid sequence of SEQ ID NO:5.

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189. A polypeptide of claim 34, comprising the amino acid sequence of SEQ ID NO:11.

190. A polypeptide of claim 34, comprising the amino acid sequence of SEQ ID NO:37.

15 191. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:44.

192. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:45.

20 193. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:46.

194. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:47.

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195. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:49.

30 196. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:50.

197. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:51.

35 198. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:52.

199. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:53.

5 200. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:55.

201. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:56.

10 202. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:57.

15 203. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:58.

204. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:59.

20 205. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:60.

25 206. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:61.

207. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:62.

30 208. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:63.

209. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:64.

35 210. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:65.

211. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:66.

5 212. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:67.

213. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:68.

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214. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:69.

15 215. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:70.

216. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:71.

20 217. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:72.

218. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:73.

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219. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:74.

30 220. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:76.

221. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:77.

35 222. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:78.

223. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:79.

5 224. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:81.

225. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:82.

10 226. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:84.

227. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:86.

15 228. A polynucleotide of claim 44, comprising the polynucleotide sequence of SEQ ID NO:48.

20 229. A polynucleotide of claim 44, comprising the polynucleotide sequence of SEQ ID NO:54.

230. A polynucleotide of claim 44, comprising the polynucleotide sequence of SEQ ID NO:80.